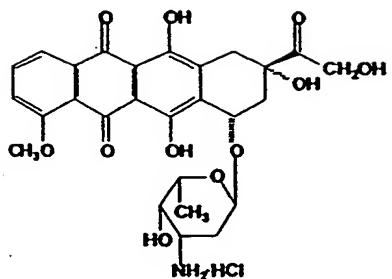
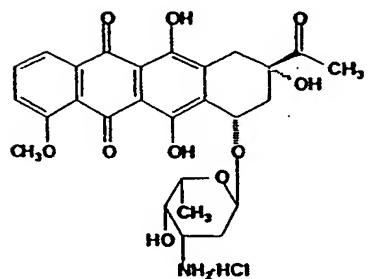


1 / 22



DOXORUBICIN



DAUNORUBICIN

FIG. 1. Structure of Doxorubicin and Daunorubicin

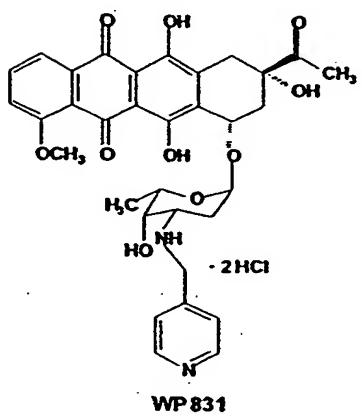
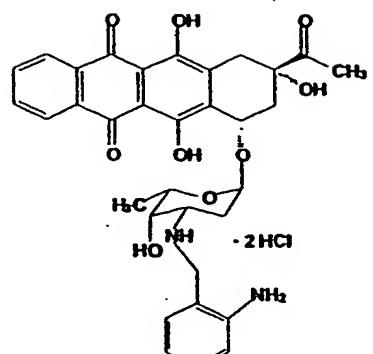
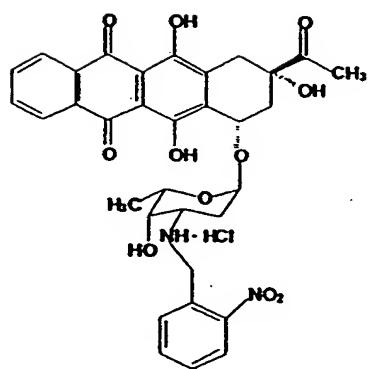


FIG. 2 Structure of WP831



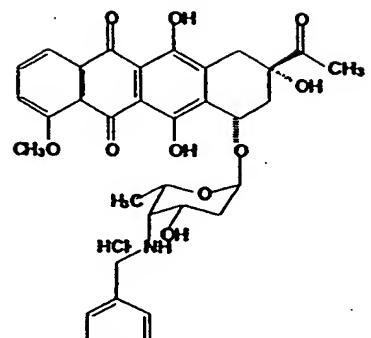
WP791

FIG. 3 Structure of WP791

WP790

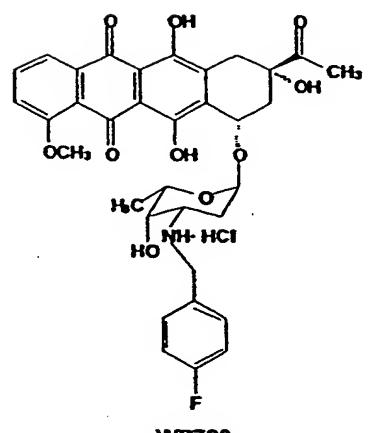
FIG. 4 Structure of WP790

3 / 22



WP787

FIG. 5 Structure of WP787



WP786

FIG. 6 Structure of WP786

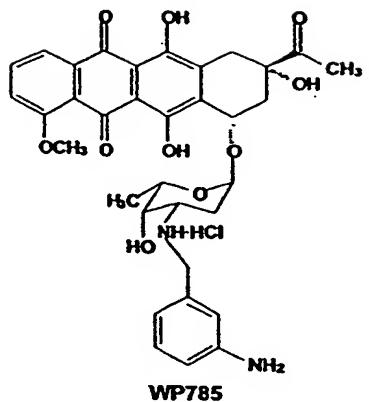


FIG. 7 Structure of WP785

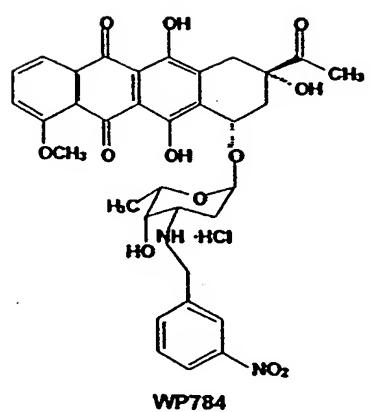


FIG. 8 Structure of WP784

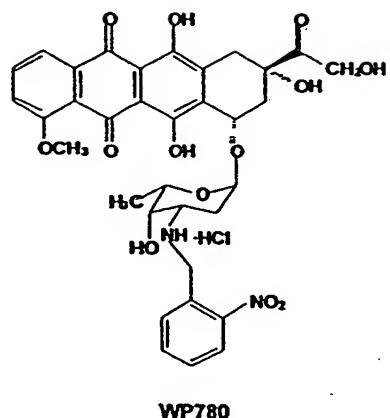


FIG. 9 Structure of WP780

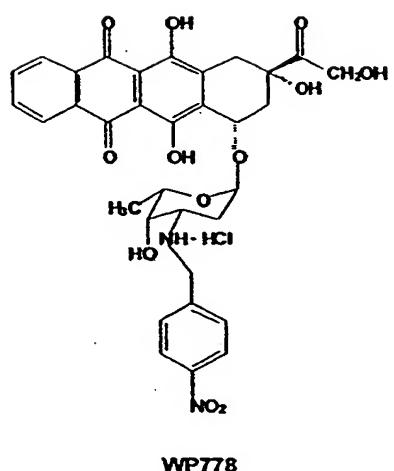
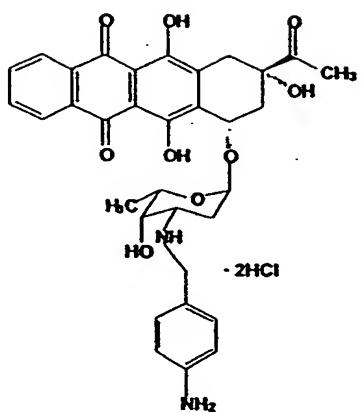
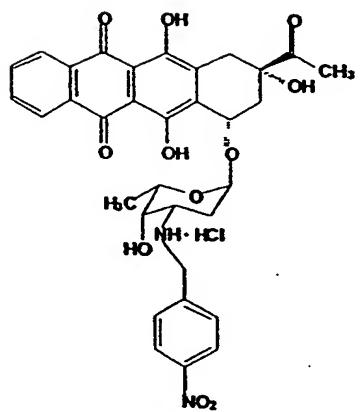


FIG. 10 Structure of WP778



WP775

FIG. 11 Structure of WP775

WP774

FIG. 12 Structure of WP774

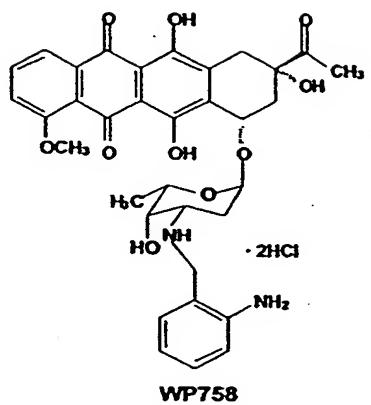


FIG. 13 Structure of WP758

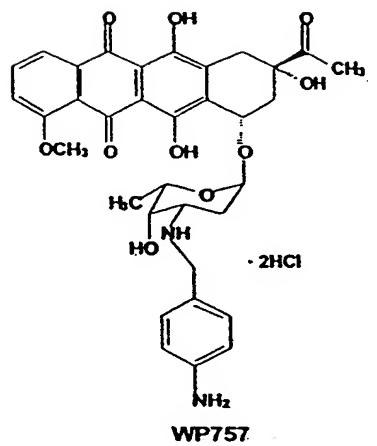
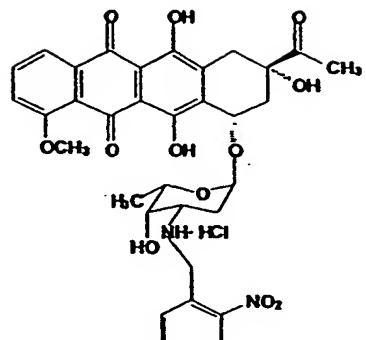
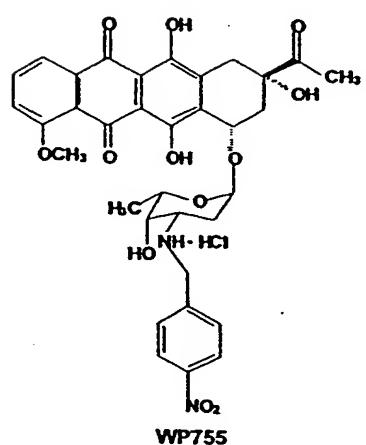


FIG. 14 Structure of WP757

8 / 22



WP756

FIG. 15 Structure WP756

WP755

FIG. 16 Structure WP755

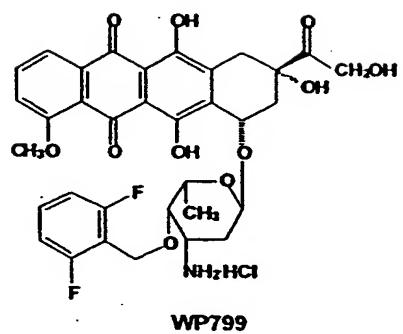


FIG. 17 Structure of WP799

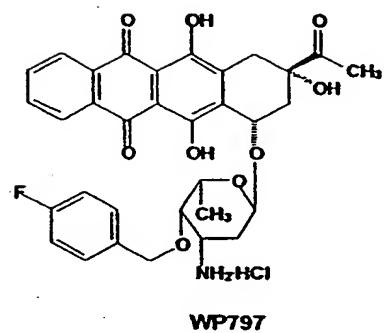


FIG. 18 Structure of WP797

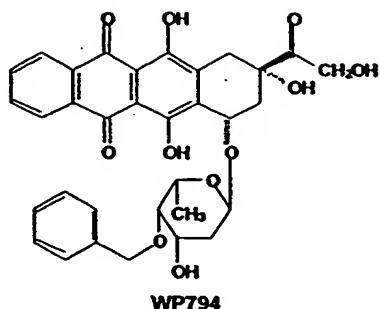


FIG. 19 Structure of WP794

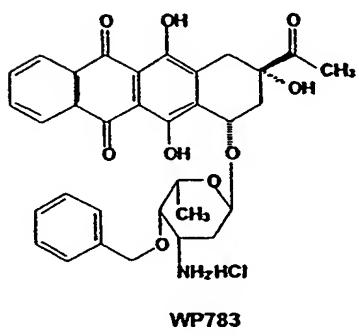


FIG. 20 Structure of WP783

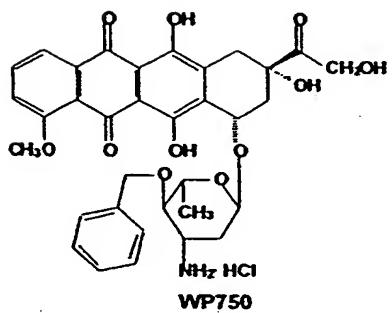
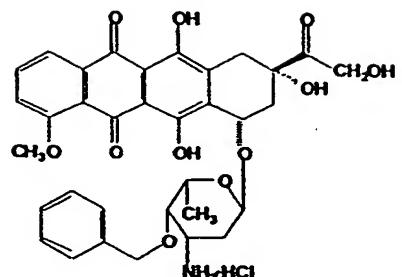
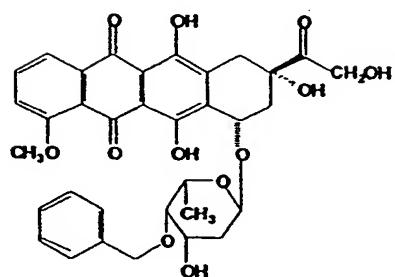


FIG. 21 Structure of WP750



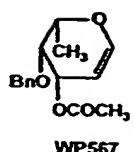
WP744

FIG. 22 Structure of WP744



WP727

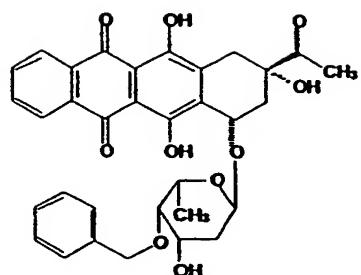
FIG. 23 Structure of WP727



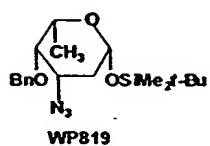
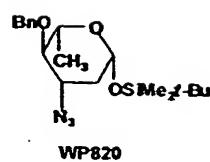
WP567

FIG. 24 Structure of WP567

12 / 22



WP793

FIG. 25 Structure of WP793**FIG. 26 Structure of WP819****FIG. 27 Structure of WP820**

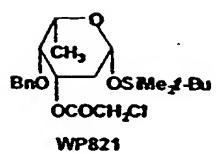


FIG. 28 WP821

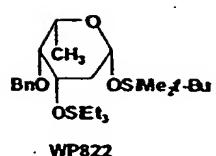


FIG. 29 Structure of WP822

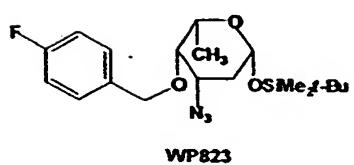


FIG. 30 Structure of WP823

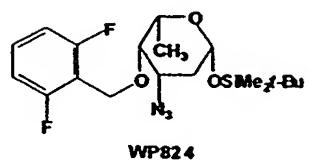
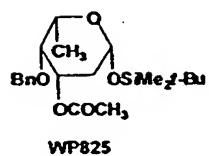
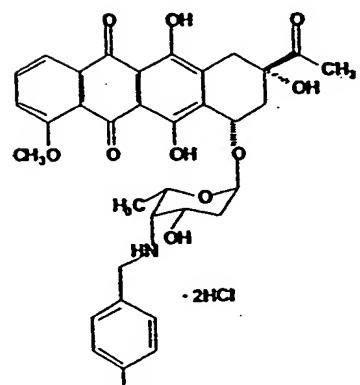


FIG. 31 Structure of WP824



WP825

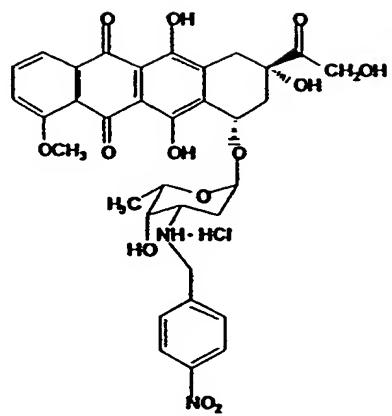
FIG. 32 Structure of WP825



WP764

FIG. 33 Structure of WP764

15 / 22



WP765

FIG. 34 Structure of WP765

FIG. 35

SYNTHESIS OF 4'-O-BENZYLATED ANTHRACYCLINES FROM 4-O-BENZYLATED GLYCALS

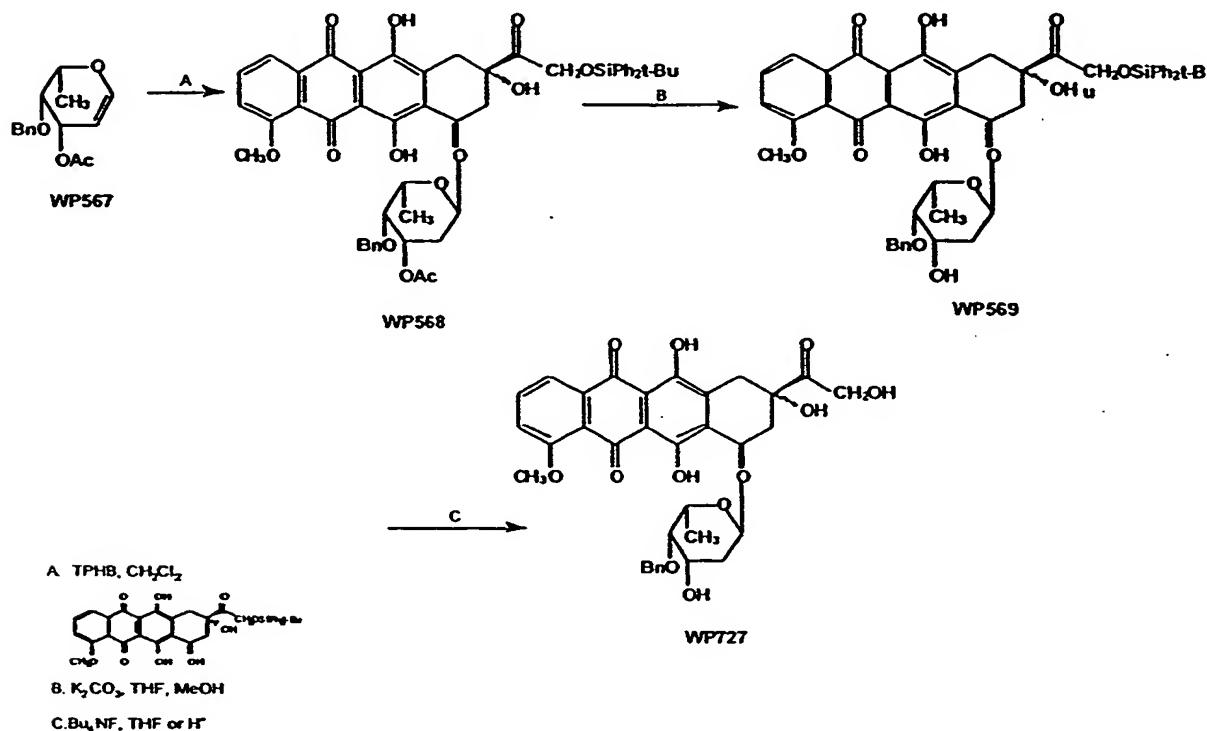


FIG. 36

SYNTHESIS OF 4'-O-BENZYL-3'-AMINO-ANTHACYCLINES

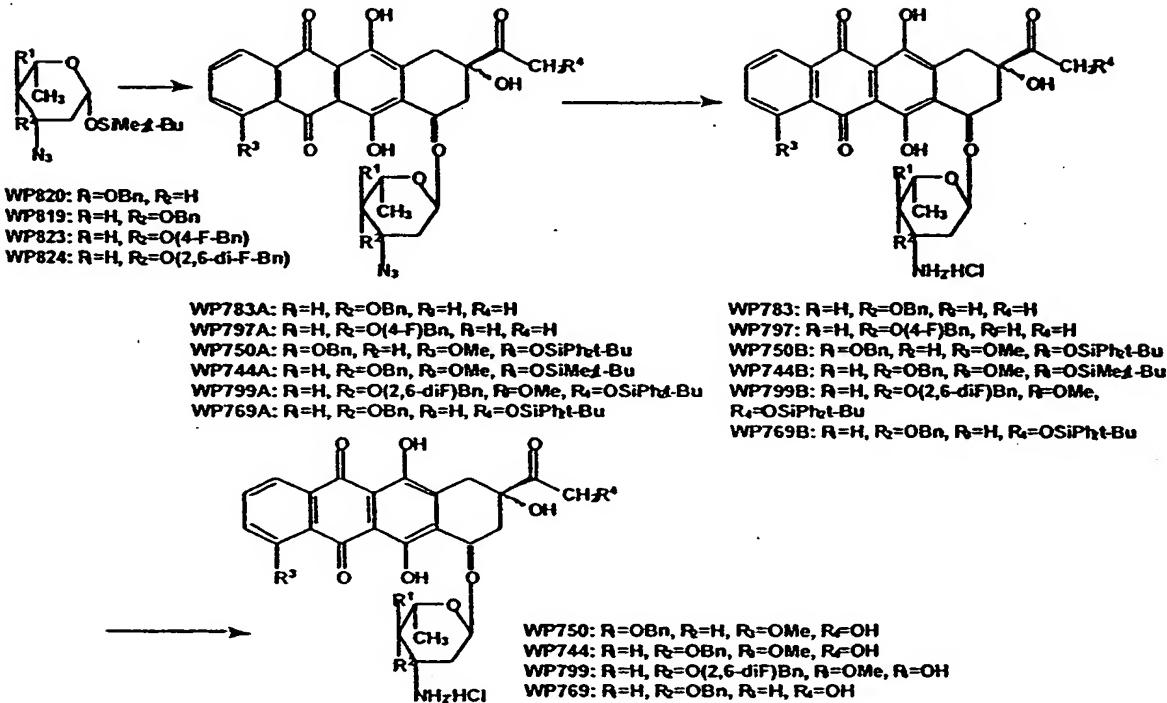
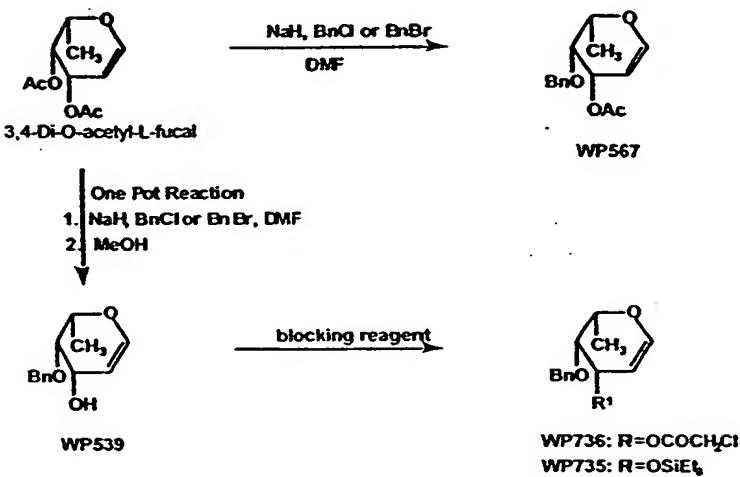


FIG. 37

SYNTHESIS OF 4-O-BENZYL-GLYCALS AND ITS 3-O-DERIVATIVES



The same procedure was used for the synthesis of other 4-O-benzylated glycals.

FIG. 38

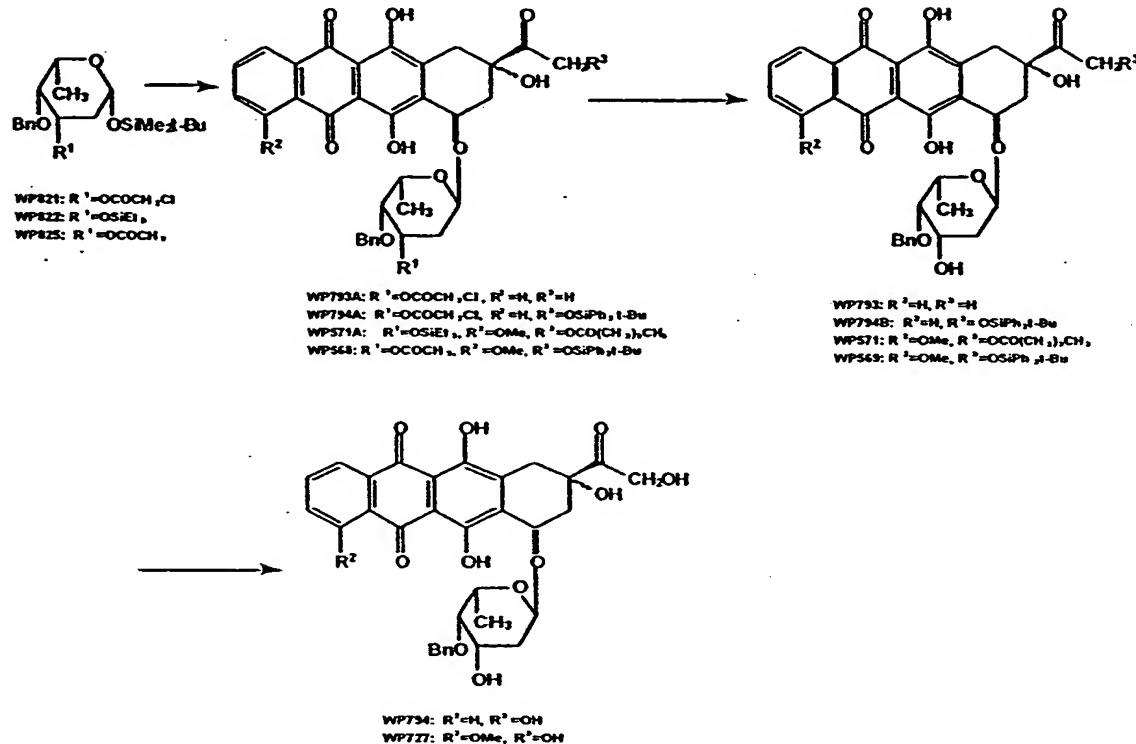
SYNTHESIS OF 4'-O-BENZYL-3'-DEAMINO-ANTHRACYCLINES
FROM 1-O-SILYLATED 4-O-BENZYL-HEXOPYRANOSES

FIG. 39

Examples of Selective Alkylation of Acylated Glycals

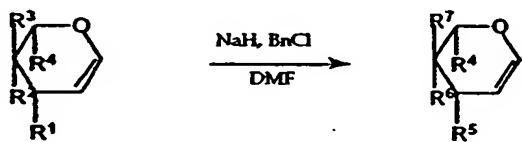
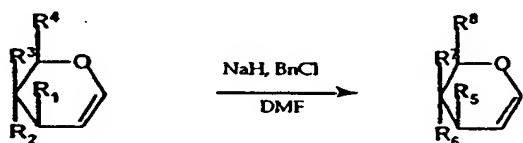
L-Rhamnal: WP- R¹=OAc, R²=H, R³=OAc, R⁴=Me, R⁵=OH, R⁶=H, R⁷=OBnL-Rhamnal: WP- R¹=OAc, R²=H, R³=OAc, R⁴=Me, R⁵=OAc, R⁶=H, R⁷=OBnL-Fucal: WP- R¹=OAc, R²=OAc, R³=H, R⁴=Me, R⁵=OH, R⁶=OBn, R⁷=HL-Fucal: WP- R¹=OAc, R²=OAc, R³=H, R⁴=Me, R⁵=OAc, R⁶=OBn, R⁷=HL-Xylal: WP- R¹=OAc, R²=H, R³=OAc, R⁴=H, R⁵=OAc, R⁶=H, R⁷=OBnD-Glucal: WP- R¹=OAc, R²=OAc, R³=H, R⁴=CH₂OAc, R⁵=OH, R⁶=OBn, R⁷=H, R⁸=CH₂OHD-Glucal: WP- R¹=OAc, R²=OAc, R³=H, R⁴=CH₂OAc, R⁵=OAc, R⁶=OBn, R⁷=H, R⁸=CH₂OAcD-Galactal: WP- R¹=OAc, R²=H, R³=OAc, R⁴=CH₂OAc, R⁵=OH, R⁶=H, R⁷=OBn, R⁸=CH₂OHD-Galactal: WP- R¹=OAc, R²=H, R³=OAc, R⁴=CH₂OAc, R⁵=Ac, R⁶=H, R⁷=OBn, R⁸=CH₂OAD-Arabinal: WP- R¹=OAc, R²=H, R³=OAc, R⁴=H, R⁵=OH, R⁶=H, R⁷=OH, R⁸=H

FIG. 40

Synthesis of 3'-azido-sugars and its 4-O-benzylated derivatives

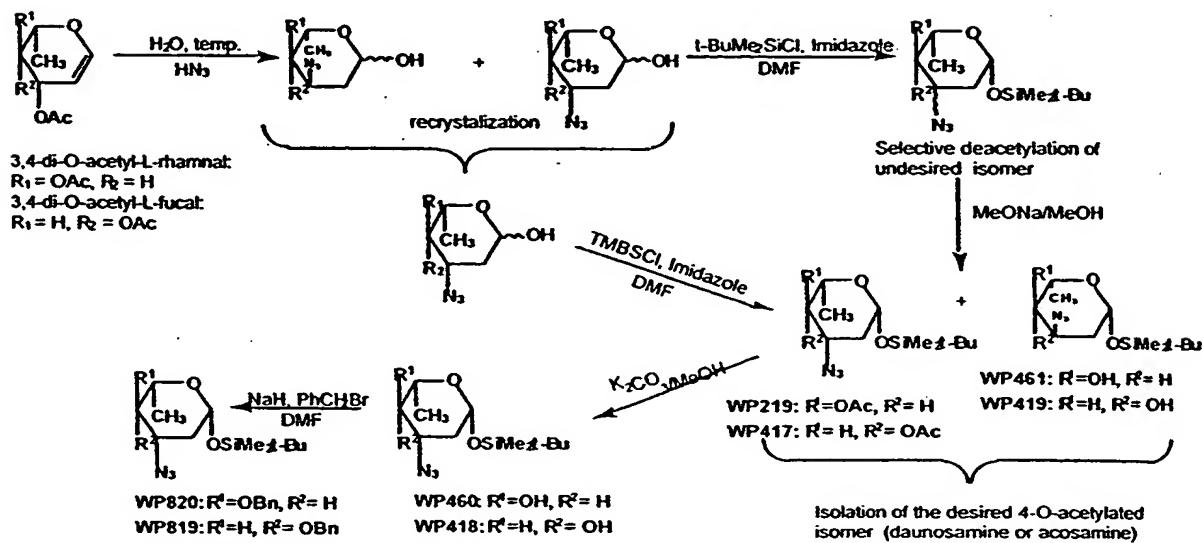


FIG. 41

ALTERNATIVE SYNTHESIS OF 3-AZIDO-4-O-BENZYL-DAUNOSAMINE FROM 3-AZIDOACOSAMINE

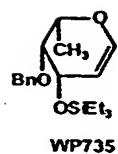
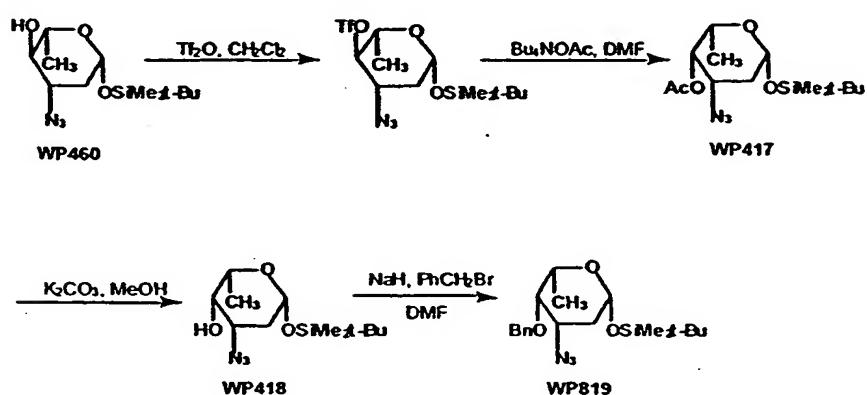


FIG. 42 Structure of WP735

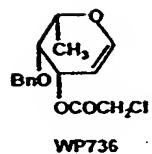


FIG. 43 Structure of WP736